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05/31/2005

DRAFT

SOUTH RIVERGATE INDUSTRIAL PARK

Oregon DEQ ECSI #: 2980

North Lombard and Rivergate Blvd., adjacent to the Willamette River.
DEQ Site Mgr: Mark Pugh
Latitude: 45.6205°
Longitude: -122.7802°
Township/Range/Section: 2N/1W/26

River Mile: 2.5 to 3.4 East bank

LWG Member ☐ Yes ☒ No

Upland Analytical Data Status: ☐ Electronic Data Available ☒ Hardcopies only

This South Rivergate Industrial Park site summary includes the following sites:

- J.R. Simplot (a.k.a. Rivergate Terminal, ECSI #3343)
- Union Oil Company (H.B. Fuller, ECSI #329)
- Ash Grove Cement
- Port of Portland [Fort James (a.k.a. Georgia Pacific and Northwest Service Center), lessee]
- Port of Portland property at 13035 N Rivergate Blvd and Pacific Gas & Electric (PG&E)
- T&G Trucking, Georgia Pacific and OnLine Roofing

1. SUMMARY OF POTENTIAL CONTAMINANT TRANSPORT PATHWAYS TO THE RIVER

The current understanding of the transport mechanism of contaminants from the uplands portions of the South Rivergate Industrial Park (SRIP) to the river is summarized in this section and Table 1, and supported in following sections.

1.1. Overland Transport

J. R. Simplot Co.: Stormwater runoff on the J. R. Simplot Co. site is divided into five drainage basins that are directed to three outfalls or to the City of Portland stormwater system. There is low probability that stormwater sheet runoff would reach the river given the existing stormwater system. See Section 10.3.2 for a detailed description of the site's drainage basins and outfall system.

Ash Grove Cement Plant: Most of this site is unpaved and filled with large piles of uncovered lime products, as seen in Figure 1. Stormwater will either seep into the ground or collect into a series of settling basins at the site. During heavy rains, the settling basins can overflow, and stormwater runoff will flow from the last settling basin to the river through a small ditch located near the river shore (DEQ 1997).

Port of Portland/Fort James Corp./Northwest Service Center: A large warehouse, covered dock, and parking lot area occupy approximately 50 percent of the parcel. The stormwater drain system is unknown; therefore, it is difficult to assess the potential for stormwater sheet runoff.

Port of Portland Property at 13035 N Rivergate Blvd and PG&E: The Port of Portland property is undeveloped. Stormwater infiltrates into the ground with some potential for stormwater sheet runoff. There are no known sources of contamination onsite, however.

T&G Trucking/OnLine Roofing: A large area of the parcel is unpaved parking area, and stormwater infiltrates into the ground. The potential for stormwater sheet runoff to reach the river is very low given the distance to the river.

1.2. Riverbank Erosion

J. R. Simplot Co.: The company complies with their erosion control plan by maintaining lawn and riprap on the shoreline of the Willamette River (Simplot 2002).

Ash Grove Cement Co.: There is no information on riverbank erosion control at this site. The bank appears vegetated and undisturbed in aerial photos.

Port of Portland/Fort James Corp./Northwest Service Center: There is no information on riverbank erosion control at this site. The bank appears vegetated and undisturbed in aerial photos.

Port of Portland Property at 13035 N Rivergate Blvd and PG&E: There is no information on riverbank erosion control at this site. The bank appears vegetated and undisturbed in aerial photos.

1.3. Groundwater

Groundwater investigations have not been conducted at any of the SRIP sites. Groundwater seepage was identified along the shorelines at J.R. Simplot Company and Ash Grove Cement Company (GSI 2003); however, no seep sample data are available. In addition, groundwater-related preferential pathways have not been evaluated at the sites.

1.4. Direct Discharge (Overwater Activities and Stormwater/Wastewater Systems)

J. R. Simplot Co.: Historically, discharges of urea and ammonia have occurred from the marine dock and associated covered conveyor belt system and from a loading arm, respectively. Contaminants also may discharge through the site's stormwater system. See Section 10.3.2 for a detailed description of the site's drainage basins and outfall system. Petroleum products have also been directly discharged during transfer of fuel to barges and from the conveyor system, as documented by spill records (see Section 8.3).

Ash Grove Cement Co.: The cement plant has an overwater conveyor belt system for loading barges with lime products, as shown in Figure 1.

Port of Portland/Fort James Corp./Northwest Service Center: No information on overwater activities and stormwater systems is available.

Port of Portland Property at 13035 N Rivergate Blvd and PG&E: There do not appear to be overwater activities in this area. No information on stormwater systems is available.

T&G Trucking/OnLine Roofing: No information on stormwater systems is available.

1.5. Relationship of Upland Sources to River Sediments

See Final CSM Update.

1.6. Sediment Transport

The South Rivergate Industrial Park is a large complex located along the east side of the river between RMs 2.5 and 3.4, where the river broadens and bends north-northeast toward the Columbia. The Multnomah Channel intersects the lower Willamette on the west side of the river across from this area. Based on the physical information compiled in the Portland Harbor Work Plan (Integral et al. 2004), the upstream half of this river reach is characterized as a transitional/depositional zone and the downstream half is fully depositional (RM 1 to 3). The Sediment Trend Analysis® suggests the eastern half of the river here is in dynamic equilibrium,

while the western portion experiences both episodic net accretion and net erosion. Time-series bathymetric change data over the 25-month period from January 2002 through February 2004 (Integral and DEA 2004) show a nearshore swath of net sediment scour between the 0 and –30 ft NAVD88 contours along the upstream border of this site to the Port of Portland/Fort James dock structure. Along the upper channel slope downstream of this area, a patchwork of net accretion and net erosional areas (to about 1 ft in extent) are evident. No or very little bathymetric change data are available for the bank areas above 0 ft NAVD88. At channel depth offshore of this property, areas of no-elevation change alternate with sizable patches of sediment accretion areas. These deposits increase in both horizontal and vertical scale (up to 2 ft of accumulation) downstream of the Multnomah Channel. This reach is the upstream portion of the depositional area known as Post Office Bar.

2. CSM SITE SUMMARY REVISIONS

Date of Last Revision: May 31, 2005

3. PROJECT STATUS

According to the ECSI database (DEQ 2004a), sites within the South Rivergate Industrial Park are regarded as having the potential to release (or have released) hazardous substances, and thus the SRIP requires further investigation.

Activity		Date(s)/Comments
PA/XPA	☐	
RI	☐	
FS	☐	
Interim Action/Source Control	☐	
ROD	☐	
RD/RA	☐	
NFA	☐	

DEQ Portland Harbor Site Ranking (Tier 1, 2, or 3): Not ranked

4. SITE OWNER HISTORY

The following is a list of some of the past owners of parcels currently within the southern part of the South Rivergate Industrial Park area. Each parcel is identified by its ECSI number followed by its current owner and current tenant. The historical list for ECSI# 3343 was compiled from Simplot (2002) and DEQ (2004a) for the period 1968 to present. All dates are approximate.

Owner/Occupant	Type of Operation	Years
ECSI #3343 – JR Simplot Co.	Storage and distribution of urea and anhydrous ammonia	11/00 - present
Prodical LLC (subsidiary of Unocal)	Storage and distribution of urea and anhydrous ammonia	1999 – Sept 2000
Unocal	Storage and distribution of urea and anhydrous ammonia	1968 – 1999
No information available	Vacant	? – 1968
ECSI #329 – Union Chemical Div. /H.B. Fuller Co.*	Manufacturer of adhesives and glues?	? - Present

Owner/Occupant	Type of Operation	Years
ECSI: none –Ash Grove Cement Plant	Manufacturing of calcium oxide (Quicklime, Pebble Lime), calcium hydroxide (hydrated lime, Kemilime®, Snowflake®), ground limestone (calcium carbonate, limestone flour), agricultural lime, ground dolomite, dolomitic rock, and commercial limestone.	1969 – present
No information available	Vacant	? – 1969
ECSI: none – Port of Portland/Fort James Corp./Northwest Service Center	Distribution of paper products	1969 - present
No information available	Vacant	? - 1969
ECSI: none – Port of Portland	Vacant lot	? - Present
ECSI: none – Douglas Walters/T&G Trucking/OnLine Roofing	T&G Trucking provides container hauling services for the Port of Portland. OnLine Roofing provides commercial and residential roofing services.	? - Present
ECSI: none – PG&E	Utility power line tower	1948 - Present

*The business relationship between H.B. Fuller and Union Chemical Div. is not clear from the information available for this review.

5. PROPERTY DESCRIPTION

The South Rivergate Industrial Park is part of the 2,800-acre Rivergate Industrial District, Portland's largest industrially zoned area (Port of Portland 2004). The industrial park is located on the east bank, extending from the mouth of the Willamette River to approximately RM 3.4 and inland to Bybee Lake. Properties north of RM 2.5 and east of Rivergate Boulevard are not discussed in this site summary, and Oregon Steel Mills is described in a separate site summary (see ECSI #141). This SRIP site summary incorporates several individual properties, as shown in Figure 1, starting at RM 2.5 with the J. R. Simplot Co. property and ending at RM 3.4 with the Port of Portland Property. It also includes the inland property of H.B. Fuller/Union Chemical Division of Union Oil Co. The following is a property description for each site.

J. R. Simplot Co. (Latitude: 45.6268° Longitude: -122.7803°): The J.R. Simplot Company's Rivergate Terminal Site occupies 31.38 acres on the alluvial plain located on the east side of the Willamette River, , about 2 miles south of the confluence of the Columbia and Willamette rivers, as shown in the Supplemental Figure 2, Site Plan, Rivergate Terminal (Simplot, 2002). The site is generally flat, with slopes generally less than 3%. Oregon Steel Mills is situated north of the site. To the west is the Willamette River and to the east is the H.B. Fuller Company. The southern property line is adjacent to the Ash Grove Cement Co. Railroad tracks surround the property on the west and north sides of the site.

The Rivergate Terminal distributes anhydrous ammonia and solid prilled and granular urea to the Pacific Northwest. Each compound is stored separately. Diesel fuel is stored onsite in a 300-gallon storage tank and is used to refuel the facility's equipment and barges. The storage and transfer facilities at the site are described below.

Anhydrous Ammonia System. As shown in Supplemental Figure 2, Site Plan, Rivergate Terminal from Simplot (2002), two insulated carbon steel tanks (48,500-ton capacity), located in the southern portion of the site, are used to store liquid anhydrous ammonia at a temperature of -28°F. The tanks are situated inside an earthen containment berm, which is covered with a combination of rock and sprayed-on asphalt emulsion coating. The building containing the ammonia control room, compressor room, and maintenance shop was constructed with concrete floors, structural steel walls, and corrugated painted

steel siding and roofing. It is surrounded by asphalt-paved walkways, driveways, and parking. The marine dock is constructed of wooden and steel pilings covered by wooden and concrete walkway surfaces. The ammonia system includes piping, compressors, condensers, an ammonia accumulator with pressure let-down system and a natural-gas-fired flare to control vaporization in the tanks, and prevent releases to air or ground. The ammonia systems are further described below:

- The pressurized ammonia load-out system consists of piping, an ammonia pre-heater, and a load rack for railcars and trucks.
- The non-pressurized ammonia load-out system consists of piping, a marine dock, and a marine arm for loading river barges.

Urea System. As shown in Supplemental Figure 2, the urea system consists of two warehouses with the capacity to store 70,000 tons of urea. The system includes covered conveyor systems and covered shipping load-out scales for both railcars and trucks. The warehouses have concrete floors and walls with composition shingle-covered wooden roofs. A 5,000-gallon urea solution tank is situated north of urea warehouse #2.

Diesel Fuel Transfer Operations. Diesel fuel is transferred from the 300-gallon storage tank to barges located at the dock, and is used to fuel tugs and barges as part of their daily operations. A pipeline extends from hard pipe header, located at the center of a bermed containment area, to the barge tie-up area. A hose is used to transfer the fuel from the pipeline to the tug and barges. There is also a vent line leading off the header to a 55-gallon drum for removal and filtering of diesel fumes during the refueling process. Both the tank and 55-gallon drum are located within a lined and bermed containment area (Simplot 2002).

Other fuel storage facilities include 1) a contained stilt leg diesel tank (250 gallons) located west of urea warehouse #1, 2) a 250-gallon double-walled oil and water compressor blowdown tank located east of the ammonia control room, and 3) a second double-walled 55-gallon tank located east of screen unit #2.

Section 10.3.2 provides a detailed description of the site's drainage basins and outfall system.

Information regarding lease of submerged lands and/or overwater structures was not found in Oregon Department of State Lands (DSL) files.

H.B. Fuller Co. /Union Chemical Div. (Latitude: 45.6268° Longitude: -122.7803°): The H.B. Fuller Co. site occupies 5.25 acres (Multnomah County 2004). J.R. Simplot is situated to the west of the site, Oregon Steel Mills is situated to the north and northeast, a vacant lot lies to the east at 14141 N Rivergate Blvd., and Ash Grove Cement is situated to the south of the site. Based on the aerial photo shown in Figure 1, two large, flat-roofed, warehouse buildings occupy most of the property on the west side. The area around the building is mostly paved parking lots.

Ash Grove Cement Plant (Latitude: 45.6234° Longitude: -122.7808°): The Ash Grove Cement Plant occupies 29.61 acres (Multnomah County 2004). The site is generally flat, except near the river where the land slopes toward the site on the inland side of the levee, and toward the river at the riverbank itself (DEQ 1997). The site is bordered on the west side by the Willamette River, the east side by Consolidated Metco Inc., and the south side by Northwest Service Centers (DEQ 2004c). J.R. Simplot and H.B. Fuller Co. properties are situated north of the site. A dock and conveyor belt system used for loading barges is situated on the shoreline. A paved parking lot area is situated on the northeast end of the site. A railroad track enters the site from the east side at the midpoint of the property and ends at a series of buildings at the north-central area of the property (Figure 1). The site contains an active UST and two decommissioned USTs. No information confirming the removal of the two decommissioned tanks was available for this review. The site also contains ASTs for waste oil (500,000 gal), propane (500 gal), diesel #2 (10,000 gal) quicklime (5,000,000 lbs.), and hydrated lime (750,000 gal) (GSI 2003).

The dock is currently permitted with the Oregon DSL. A public notice to perform annual maintenance dredging of up to 2,500 cubic yards of sediment offshore from the existing docking structures of the Ash

Grove Cement Plant was published by the U.S. Army Corps of Engineers on May 20, 2005. All dredged material would be placed in an approved upland disposal site. The extent of the proposed dredging is shown in the attached drawing, Top View of Project Site. Dredging will occur over five years (USACE 2005).

Port of Portland/Fort James Corp./Georgia Pacific/Northwest Service Center: The Norwest Service Center is bordered by the Willamette River to the west, Ash Grove Cement Co. to the north, and undeveloped land to the east and south. Figure 1 shows that the site expands over two tax lots owned by the Port of Portland (acreage was not available). A flat-roofed warehouse building and paved loading area cover almost half of the northern tax lot. The northwest side of the southern tax lot is covered by a continuation of the warehouse building and a paved parking area for trailers. The approximately 900-ft covered dock connects the northwest end of the building to its southwest end (see Figure 1). Currently, there is one active permitted UST and reports of two decommissioned USTs at this site. The removal of the decommissioned storage tanks is unknown (DEQ 2004d).

Information regarding the lease of submerged lands and/or overwater structures was not found in Oregon DSL files.

PG&E: PG&E owns a 1.5-acre lot surrounded by Port of Portland property from the north, east, and south, and by the Willamette River from the west side near RM 3.35 (Figure 1). A large utility power line tower stands in the middle of the plot. The remaining space in the parcel is undeveloped (see Figure 1).

Port of Portland Property at 13035 N Rivergate Blvd: Figure 1 shows two other similar PG&E power line towers located inside the Port of Portland property to the north and south of the PG&E site. An access road runs from N. Rivergate Blvd. across the Port of Portland property. The road starts on the southeast end of the Fort James Corp. site extending west and curving toward the central tower. The road then continues east from the central tower following the property line north of Time Oil site and the T&G Trucking/OnLine Roofing site. The site is undeveloped with both exposed soil and vegetated surfaces. A small pond is located in the southeast portion of the parcel (GSI 2003).

T&G Trucking/OnLine Roofing: T&G Trucking and OnLine Roofing share the same address as Port of Portland's property, at 13035 N Rivergate Blvd. They are located in a small lot southeast of the Port of Portland parcel and northeast of Time Oil site, as shown in Figure 1. The site topography is flat and contains two large flat-roofed buildings. A large area of the parcel is an unpaved parking lot for truck trailers (see Figure 1). No additional information is available.

6. CURRENT SITE USE

J.R. Simplot Co.: Simplot (2002) states that the terminal site currently distributes anhydrous ammonia and solid prilled and granular urea to the Pacific Northwest. These products are used for the production of ink, for use in water treatment at industrial facilities, for the production of resins and for use as nitrogen-based fertilizers (RTKN 2003). Both compounds are manufactured offsite and transported to the terminal by maritime ships and barges. Anhydrous ammonia and urea are also transported out of the facility by barges, truck, and rail car (RTKN 2003).

Union Chemical Div./H.B. Fuller Co. : H.B. Fuller Co. manufactures adhesives and glues (DEQ 2004a). The site is currently identified as a fertilizer processing site by DEQ. No other information on current uses of the site is available.

Ash Grove Cement Plant: The Ash Grove Cement Plant is a lime manufacturing plant. Site activities include raw material [calcium carbonate (CaCO3)] handling, sizing limestone and dolomite, using calcimatic kilns to produce chemical lime, hydrating lime to produce calcium hydroxide, and using roller mills/dryers to produce agricultural lime (DEQ 2003). Transport of lime material to the site is probably done by rail and barge, as shown in Figure 1, although there is no available information to confirm this.

The kilns are cooled with non-contact cooling water. There are no other process water flows in the plant. The non-contact cooling water is pumped from wells onsite, treated with chlorine, circulated around the kilns, and then discharged into several in-series settling basins. Water is then pumped from the settling basins to irrigation sprinklers to maintain the lawns at the plant site (DEQ 1997).

Port of Portland/Fort James Corp./Northwest Service Center: The Northwest Service Center is a distributor of paper goods. No other information is available for this site (GSI 2003).

Port of Portland Property at 13035 N Rivergate Blvd and PG&E: A utility power line tower occupies the PG&E site. Maintenance of the structure is done via the access road located on the surrounding Port of Portland property. The Port of Portland property is vacant, with both exposed soil and vegetated surfaces (see Figure 1).

T&G Trucking/OnLine Roofing: T&G Trucking provides trucking services for the Port of Portland (30+ drivers) (Port of Portland 2004). OnLine Roofing provides commercial and residential roofing services. No additional information is available (Online Roofing 2004).

7. SITE USE HISTORY

J.R. Simplot Co.: Simplot (2002) states that the terminal has been distributing anhydrous ammonia and solid prilled and granular urea to the Pacific Northwest since 1968. Both compounds are manufactured offsite and transported to the terminal by maritime ships and barges. Before 1968, the site was vacant (GSI 2003). The property was originally owned by Union Oil Company of California, which changed the name to Prodica LLC in 1999 (Unocal 1999). J.R. Simplot then purchased the property in September 2000 and is the current owner (DEQ 2004a). Aerial photography revealed that in 1969 a warehouse, dock, and rail spur were present. In 1974, a large liquid ammonia storage tank was present, along with an expanded dock and additional buildings. By 1979, a larger warehouse was present east of the original building, and several ASTs appear in the southeast portion of the parcel. In 1985, a second large ammonia storage tank was present. The north dock was extended farther into the river. No significant changes have been made since 1989 (GSI 2003). Other substances handled at the site include sulfur, nitrogen, sodium hydroxide, and sulfuric acid (DEQ 2001).

Ash Grove Cement Plant: Based on historical aerial photographs, GSI (2003) indicated that from 1936 until 1956, the parcel was undeveloped and covered with dredged fill. Plant construction started in 1963, and the facility was completed and operating by 1966. A possible AST was present by 1974 in the southeast portion of the parcel. By 2001, the plant had been expanded, and there were many large piles of material present.

Union Chemical Div./H.B. Fuller Co. : No historical information was available at the time of this report.

Port of Portland/Fort James Corp./Northwest Service Center: According to GSI (2003), the current warehouse buildings and dock have been present since 1969. The eastern portion of the parcel has remained undeveloped.

Port of Portland Property at 13035 N Rivergate Blvd and PG&E: A utility power line tower and electrical utility right-of-way were in place in 1948. No other developments have occurred in the parcel since then (GSI 2003).

T&G Trucking/OnLine Roofing: There are no historical records available, except for evidence of a soil pile, containers, and vehicles observed in a 2001 photo (GSI 2003).

8. CURRENT AND HISTORIC SOURCES AND COPCS

The understanding of historic and current potential upland and overwater sources at the site is summarized in Table 1. The following sections provide a brief overview of the potential sources and COPCs at the site requiring additional discussion.

8.1. Uplands

Table 1 summarizes the potential sources and transport pathways at SRIP.

J.R. Simplot Co.: According to DEQ (2001), Union Oil operated under DEQ air quality permits since early 1970s, and three notices of non-compliance (NONs) were issued from 1971 to 1975 for excessive dust emissions. No NONs have been issued since upgrades were completed at the facility in 1977. In 1982, a release of ammonia occurred during transfer from a ship to an aboveground storage tank; the ammonia was vacuumed from the site (DEQ 2001). In 1982, Unocal registered the site as a small-quantity generator (SQG) of caustic D002 characteristic waste, which was stored in a 2,100-gallon UST. In 1998, Unocal was registered as a large-quantity generator in order to dispose of the caustic/solvent tank contents. Following disposal of the tank contents, Unocal resumed their conditionally exempt generator (CEG) status (DEQ 2001). During construction excavation activities in May 2002, diesel-contaminated soil was encountered at about 18 inches bgs. A site evaluation was performed on June 13, 2002. No further information is available (DEQ 2004a).

Ash Grove Cement Plant: According to DEQ (2001), a permit for general emissions for the kilns was issued in 1969. In 1973, a NOV was issued for exceeding opacity limits. Since then, a number of modifications to the process have occurred, and no NONs have been issued. The cement plant has been a registered hazardous waste generator with DEQ since 1992 (DEQ 2004a) and has had no violations (GSI 2003). Leakage from a gasoline UST due to an overfill was discovered during decommissioning of the tank in January 1990. The site was cleaned up bt June 1991. No further information is available (DEQ 2004a). In 1991, Ash Grove Cement Co. registered as a CEG of hazardous waste, and in 1993 DEQ confirmed that the site no longer generated hazardous waste. In 1994, DEQ issued a NON due to discharge of water with elevated pH (11.65). In that same year, the site incinerated 4.7 million gallons of oil. In 1998, the facility reported a kaolin clay and water mixture discharge to the Willamette River from an unidentified outfall. DEQ issued a NFA (DEQ 2001).

Union Chemical Div./H.B. Fuller Co. : DEQ's ECSI #329 Site Summary Report describes a release of anhydrous ammonia (up to 15,000 tons) that occurred in February 1982 during transfer from a ship to two ASTs. The product was vacuumed from the site, and no other clean-up was required (DEQ 2001). No other information is available for this site.

Port of Portland/Fort James Corp./Northwest Service Center: According to GSI (2003), the two parcels have been leased by Georgia Pacific/Fort James/Northwest Service Center since 1969. Two AST tanks are present, a 500-gallon diesel heating fuel tank and a 5,000-gallon propane tank. The Hazardous Substance Information Survey identified the following quantities of hazardous materials onsite: up to 1000 ft^3 of acetylene in cylinders, 200 gallons of antifreeze in drums, 1000 ft^3 unidentified gas in cylinders, 200 gallons of diesel fuel in drum, and 500 gallons of diesel heating fuel in a storage tank. There is one permitted active and upgraded UST and two decommissioned USTs. No additional information is available.

Port of Portland Property at 13035 N Rivergate Blvd and PG&E: There are no records of historic sources or potential COPCs at this site.

Port of Portland/T&G Trucking/OnLine Roofing: No additional information is available.

8.2. Overwater Activities

☒ Yes ☐ No

J.R. Simplot Co.: Anhydrous ammonia, urea, and diesel fuel are transferred overwater. Numerous releases of ammonia and urea to the Willamette River have been reported at the site (DEQ 2001). Other releases of oil and diesel fuel to the river were related to activities and maintenance of the overwater conveyor belt as listed in Section 8.3 below.

Ash Grove Cement Co.: There is overwater activity at this site but there are no records available to describe them. Activities may be related to loading and unloading of lime products to and from barges. A public notice to perform annual maintenance dredging of up to 2,500 cubic yards of sediment offshore from the existing docking structures of the Ash Grove Cement Plant was published by the U.S. Army Corps of Engineers on May 20, 2005. All dredged material would be placed in an approved upland disposal site (USACE 2005). The extent of the proposed dredging is shown in the attached drawing, Top View of Project Site.

Union Chemical Div./H.B. Fuller Co.: There are no overwater activities at this site.

Port of Portland/Fort James Corp./Northwest Service Center: There is overwater activity at this site, but no descriptive records are available. Activities may be related to loading and unloading of paper products to and from barges.

Port of Portland Property at 13035 N Rivergate Blvd and PG&E: There are no overwater activities at this site.

Port of Portland/T&G Trucking/OnLine Roofing: There are no overwater activities at this site.

8.3. Spills

Known or documented spills at the SRIP sites were obtained either from DEQ's Emergency Response Information System (ERIS) database for the period of 1995 to 2004, from oil and chemical spills recorded from 1982 to 2003 by the U.S. Coast Guard and the National Response Center's centralized federal [see Appendix E of the Portland Harbor Work Plan (Integral et al. 2004)], from facility-specific technical reports, or from DEQ correspondence. These spills are summarized below.

Site	Date	Material(s) Released	Volume Spilled (gallons)	Spill Surface (gravel, asphalt, sewer)	Action Taken (yes/no)
J.R. Simplot	1982	Ammonia	Not available	Gravel / atmosphere	Yes
	1991	Ammonia gas	Unknown	Atmosphere	No
	1995	Stand pipe vapor flare failure	Not reported	Atmosphere / river	No
	1995	Fuel line leak on barge, ammonia gas release	Not reported	River	No
	4/13/98	Urea	1,000 – 1,600 lbs	River	No
	5/5/98	500- by 50-feet sheen on river	Unknown	River	No
	11/16/99	Oil sheen on river	Not available	River	No
	12/28/00	Urea	Unknown	River	No

Site	Date	Material(s) Released	Volume Spilled (gallons)	Spill Surface (gravel, asphalt, sewer)	Action Taken (yes/no)
	01/15/01	Conveyor-residual lube oil into river	Not available	River	No
	4/25/01	Ammonia	Unknown	Atmosphere	No
	5/29/01	Granular urea	500 lbs	Dock, ship deck, and river	Unknown
	11/13/01	Light sheen during barge maintenance	Not reported	River	No
	5/28/02	Diesel/lube oil	Unknown	Soil	Not available
	9/28/02	Anhydrous ammonia	Unknown	River	Unknown
Union Chemical Div./H.B. Fuller	1982	Ammonia	Not available	Gravel / atmosphere	Yes
Ash Grove Cement	1990	Gasoline	Unknown	Soil	Yes

9. PHYSICAL SITE SETTING

DEQ (2004a) indicates that a site evaluation was completed at the JR Simplot Company property; however, the completion of this site evaluation is not available in the files. No documented subsurface environmental investigations have been completed at the remaining SRIP facilities.

The sites are located adjacent to the eastern shoreline of the Willamette River (DEQ 2001).

9.1. Geology

Available files indicate that no geologic data have been collected at the SRIP site.

9.2. Hydrogeology

Available files indicate that no hydrogeologic data have been collected at the SRIP site.

Seep Locations. One groundwater discharge seep was identified along shoreline of J.R. Simplot Company during the seep reconnaissance survey. The seep occurs at the base of the beach near the water line where silty/clayey soil crops out below overlying sand (GSI 2003).

Two seeps were identified along the shoreline of Ash Grove Cement Company during the seep reconnaissance survey: one near the southern corner of the property and the other near the northern corner of the property. The seep at the southern corner of the property occurs along a line of clayey soil at the base of the slope; the seep location is highlighted by iron (ferric hydroxide) staining. The seep at the northern corner of the property occurs where silty/clayey soil crops out below overlying gravel and cobbles; the seep is highlighted by iron (ferric hydroxide) staining (GSI 2003).

10. NATURE AND EXTENT (*Current Understanding*)

The current understanding of the nature and extent of contamination for the uplands portions of the SRIP site is summarized in this section. When no data exist for a specific medium, a notation is made.

10.1. Soil

10.1.1. Upland Soil Investigations

☒ Yes ☐ No

J.R. Simplot Co.: During a construction expansion excavation in May 2002, diesel-contaminated soil was encountered at about 18 inches bgs. A site evaluation was performed on June 13, 2002. No further information is available (DEQ 2004a).

Ash Grove Cement Co.: Leakage from a gasoline UST due to overfill was found during decommissioning of the tank in January 21, 1990. The spill-impacted area was remediated in June 12, 1991. No further information is available (DEQ 2004a).

Union Chemical Div./H.B. Fuller Co. : No information is available.

Port of Portland/Fort James Corp./Northwest Service Center: No information is available.

Port of Portland Property at 13035 N Rivergate Blvd and PG&E: No information is available.

T&G Trucking/OnLine Roofing: No information is available.

10.1.2. Riverbank Samples

☐ Yes ☒ No

10.1.3. Summary

No soils data are available for the SRIP facilities. Releases at the J.R. Simplot and Ash Grove Cement sites have been confirmed by DEQ. J.R. Simplot performed a site evaluation in 2002, but no information relative to investigation or cleanup activities is available (DEQ 2004a). Gasoline-contaminated soil was remediated at the Ash Grove Cement plant in 1991 (DEQ 2004a). The southern part of the industrial park remains undeveloped, and there are no records of historical contamination.

10.2. Groundwater

10.2.1. Groundwater Investigations

☐ Yes ☒ No

Available documents in the DEQ file indicate that no groundwater investigations have been conducted at the SRIP sites.

10.2.2. NAPL (Historic & Current)

☐ Yes ☐ No

Groundwater impacts at the SRIP sites, including the presence or absence of NAPL, are unknown.

10.2.3. Dissolved Contaminant Plumes

☐ Yes ☐ No

Groundwater impacts at the SRIP sites are unknown.

Plume Characterization Status ☐ Complete ☐ Incomplete

Not applicable (N/A). Groundwater data are not available.

Plume Extent

N/A. Groundwater data are unavailable.

Min/Max Detections (Current situation)

N/A. Groundwater data are unavailable.

Current Plume Data

N/A. Groundwater data are unavailable.

Preferential Pathways

Groundwater-related preferential pathways have not been reviewed at the SRIP sites.

Downgradient Plume Monitoring Points (min/max detections)

N/A. Groundwater data are unavailable.

Visual Seep Sample Data ☒ Yes ☐ No

Seeps have been identified along the shoreline of SRIP site during the seep reconnaissance survey (GSI 2003). However, available records indicate no samples from the seeps have been collected.

Nearshore Porewater Data

Available documents in the DEQ file do not contain any nearshore porewater data for the site.

Groundwater Plume Temporal Trend

N/A. Groundwater data are unavailable.

10.2.4. Summary

Available records indicate that no groundwater investigations have been conducted at the SRIP properties. DEQ (2004a) indicates that a site evaluation was completed at the JR Simplot Company property in 2004; however, the completion of this site evaluation is not documented.

Seeps were identified along the shorelines at J.R. Simplot Company and Ash Grove Cement Company (GSI 2003). No seep sample data are available. In addition, groundwater-related preferential pathways have not been reviewed at the site.

10.3. Surface Water

10.3.1. Surface Water Investigation ☐ Yes ☒ No

10.3.2. General or Individual Stormwater Permit (Current or Past) ☒ Yes ☐ No

The J.R. Simplot site is the only SRIP site with a stormwater permit on file. The stormwater system and permit information are summarized below.

J.R. Simplot Co.: The J.R. Simplot site contains five drainage basins, as shown in the Supplemental Figure, Post-Development Site Storm Drainage & Erosion Control Site Plan from Simplot (2002). Stormwater in Basin 1 (2 acres) drains through discharge culvert # 1 (WR-17 in Figure 1) via a catch basin with an oil/sediment insert. Stormwater drains Basin 2 (1 acre) through discharge culvert # 2 (WR-18 in Figure 1). Stormwater from Basin 2 enters two possible catch basins, both with oil/sediment inserts. Stormwater in Basins 3 and 5 (7-8 acres) drains through the City of Portland storm sewer (OF 53A in Figure 1) via three possible catch basins (Simplot 2004). The remaining basin (Basin 4) does not appear to have a storm drain system. Based on the figure, water appears to filter into the ground.

Permit Type	File Number[1]	Start Date	Outfalls[2]	Parameters/Frequency
GEN 12Z	988827 - new	8/29/2000	#1 / WR-17 and #3 / OF53A	Standard[3]/2 times a year[4]
GEN 12Z	988568 - transfer	9/25/2000	#1 / WR-17 and #3 / OF53A	Standard[3]/2 times a year[4]
GEN 12Z	988569 - transfer	9/25/2000	#1 / WR-17 and #3 / OF53A	Standard[3]/2 times a year[4]
GEN 12Z	985429 - renewal	9/30/2002	#1 / WR-17 and #3 / OF53A	Standard[3]/2 times a year[4]

[1]DEQ (2004b).
[2]Outfall numbers, as shown in the Supplemental Site Map from Simplot (2002), are cross-referenced with outfall numbers located in Figure 1.
[3]Standard GEN 12Z Industrial stormwater includes pH, TSS, oil & grease, E. coli, visual monitoring (Integral et al. 2004).
[4] Sampled during the first storm event with a discharge after April 1st and October 1st. Monthly visual observation for floating solids, oil & grease sheen (Simplot 2002).

Do other non-stormwater wastes discharge to the system? ☐ Yes ☒ No

10.3.3. Stormwater Data ☐ Yes ☒ No

10.3.4. Catch Basin Solids Data ☐ Yes ☒ No

10.3.5. Wastewater Permit ☒ Yes ☐ No

J.R. Simplot and Ash Grove Cement have wastewater permits, as described below. The remaining SRIP sites do not appear to have wastewater permits based on review of DEQ files.

J.R. Simplot Co.: In 1995, Union Oil was issued a general discharge permit for non-contact cooling water from two ammonia chillers. The permit has been transferred and renewed several times prior to the current permit, which expired in July 31, 2001.

Permit Type	Permit Number[1]	Start Date	Outfalls[2]	Volumes	Parameters/Frequency
GEN 01	Not available	1995	2 / WR-18	Unknown	Standard[3]
GEN 01	989607 - transfer	11/10/1999	2 / WR-18	Unknown	Standard[3]
GEN 01	988611 - transfer	9/25/2000	2 / WR-18	Unknown	Standard[3]
GEN 01	988624 - transfer	9/25/2000	2 / WR-18	Unknown	Standard[3]
GEN 01	987675 - renewal	6/20/2001	2 / WR-18	Unknown	Standard[3]

[1] DEQ (2004b).
[2] Outfall numbers, as shown in the Supplemental Site Map from Simplot (2002), are cross-referenced with outfall numbers located in Figure 1.
[3] Standard GEN 01 Cooling water/heat pumps permit requirements include flow, temp, pH, total residual chlorine (Integral et al. 2004).

Ash Grove Cement Plant: The earliest record on file is an application for renewal of a Lime Kiln Seal Water NPDES permit dated September 25, 1996. A continuous record of permit renewals extends to the currently active permit, which is under review for renewal dated January 5, 2005.

Permit Type	Permit Number[1]	Start Date	Outfalls[2]	Volumes	Parameters/Frequency
NPDES-IW-O	100865 - renewal	3/19/1992	#001 / WR-19?	Not Available	Standard[3]
NPDES-IW-O	101478 - renewal	4/25/1997	#001 / WR-19?	"	Standard[3]
NPDES-IW-O	102465 - renewal	2/28/2002	#001 / WR-19?	"	Standard[3]
NPDES-IW-N	3523 - renewal	Not available	#001 / WR-19?	"	Standard[4]
NPDES-IW-N	100303- renewal	3/27/1987	#001 / WR-19?	"	Standard[4]

[1] DEQ (2004b).
[2] Outfall number, as described in NPDES permit (DEQ 2002), is cross-referenced with outfall number located in Figure 1.
[3] For NPDES-IW-O facilities not elsewhere classified that dispose of non-process wastewaters (cooling water, boiler blowdown, filter backwash, etc.), permit requirements include flow, temp, pH, total suspended solids (DEQ 2004b).
[4] For NPDES-IW-N facilities not elsewhere classified that dispose of process wastewaters (DEQ 2004b).

10.3.6. Wastewater Data

☒ Yes ☐ No

J.R. Simplot Co.: According to DEQ (2001), Union Oil met wastewater permit requirements between 1995 and 2001. No further information is available.

Ash Grove Cement Plant: According to the proposed NPDES permit notice (dated January 5, 2005), no noncompliances were noted during the current permit cycle (DEQ 2005a). Waste discharge is monitored for suspended solids, pH, temperature, and flow rate. The NPDES permit review report indicated that "the wastewater from this facility does not contain any listed toxic substances" (DEQ 2005b). For that reason, no wastewater data are provided here.

10.3.7. Summary

J.R. Simplot Co.: Stormwater at the site either infiltrates into the ground or is collected in catch basins distributed in five drainage basins throughout the property. Three outfalls receive stormwater from four drainage basins and discharge directly into the Willamette River, as shown in Supplemental Site Map from Simplot (2002). There is potential for the stormwater system to entrain urea, which can be deposited in transport through normal operations during business hours.

Ash Grove Cement Plant: According to DEQ (1997), the non-contact cooling water from the kilns is discharged into several in-series settling basins. The settling basins also collect stormwater runoff from other parts of the plant. Most of the time, all of the non-contact cooling water and runoff is used for irrigation, and no discharges occur. During periods of heavy rainfall, there is the possibility that the settling basin water capacity may be exceeded and that direct discharge to the Willamette River may occur through a small ditch by the settling basin located adjacent to the river. Some of the stormwater will also seep into the ground.

10.4. Sediment

10.4.1. River Sediment Data

☒ Yes ☐ No

Sediment sampling in the vicinity of the SRIP properties has been performed during two surveys: Weston (1998), and Integral (2004). Summary results from these investigations are found in Table 2. In 1998, Weston sampled sediment at one station (SD002; Figure 1)

located near the Port of Portland and PG&E properties. In October 2002, Round 1 sediment data were collected in the lower Willamette River, including one station along the shoreline of Port of Portland/Fort James/Northwest Service Center and one beach sediment sample located near Weston's Station SD002.

10.4.2. Summary

See Final CSM Update.

11. CLEANUP HISTORY AND SOURCE CONTROL MEASURES

11.1. Soil Cleanup/Source Control

J.R. Simplot Co.: During a construction expansion excavation in May 2002, diesel-contaminated soil was encountered at about 18 inches bgs. A site evaluation was performed on June 13, 2002. No further information is available (DEQ 2004a).

According to Simplot (2002), several source controls were implemented and are described below:

- The roof gutter from the bagging building was diverted to French drains to minimize runoff of clean stormwater. The drywells previously used for roof drain dispersion were closed in accordance with DEQ regulations in September 2001.
- Sumps and drains to stormwater discharges are protected by chip bags and screens designed to exclude soil and debris from discharge.
- All urea loading and unloading is done under covered buildings and conveyor belt system.
- All dry products collected during daily cleanup operations are stored in drums.
- Oily water removed from river barge compressor skids is pumped into drums and stored inside a building.
- Erosion and sediment is controlled by maintaining lawn areas and shoreline riprap on the Willamette River and minimizing vehicle traffic on non-paved areas.
- Several source control plans exist and are reviewed, as needed, annually, which include the petroleum spill prevention control and counter measures plan, stormwater pollution control plan, spill prevention and response procedures, waste chemical and material disposal, and employee education.
- Reporting of stormwater quality monitoring.

Ash Grove Cement Plant: Leakage from a heating oil UST due to an overfill was found during decommissioning of the tank in January 1990. The site was cleaned up by June 1991. No further information is available (DEQ 2004a). Available information related to air emissions control is described in DEQ (2003).

Union Chemical Div./H.B. Fuller Co.: No information is available.

Port of Portland/Fort James Corp./Northwest Service Center: No information is available.

T&G Trucking/OnLine Roofing: No information is available.

11.2. Groundwater Cleanup/Source Control

Available records indicate that no groundwater investigation, cleanup, or source control activities have been conducted at the SRIP site.

11.3. Other

J.R. Simplot Co.: In 1977, Union Oil upgraded its urea handling facility to eliminate excessive urea dust emissions.

11.4. Potential for Recontamination from Upland Sources

See Final CSM Update.

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Figures:

Figure 1. Site Features

Tables:

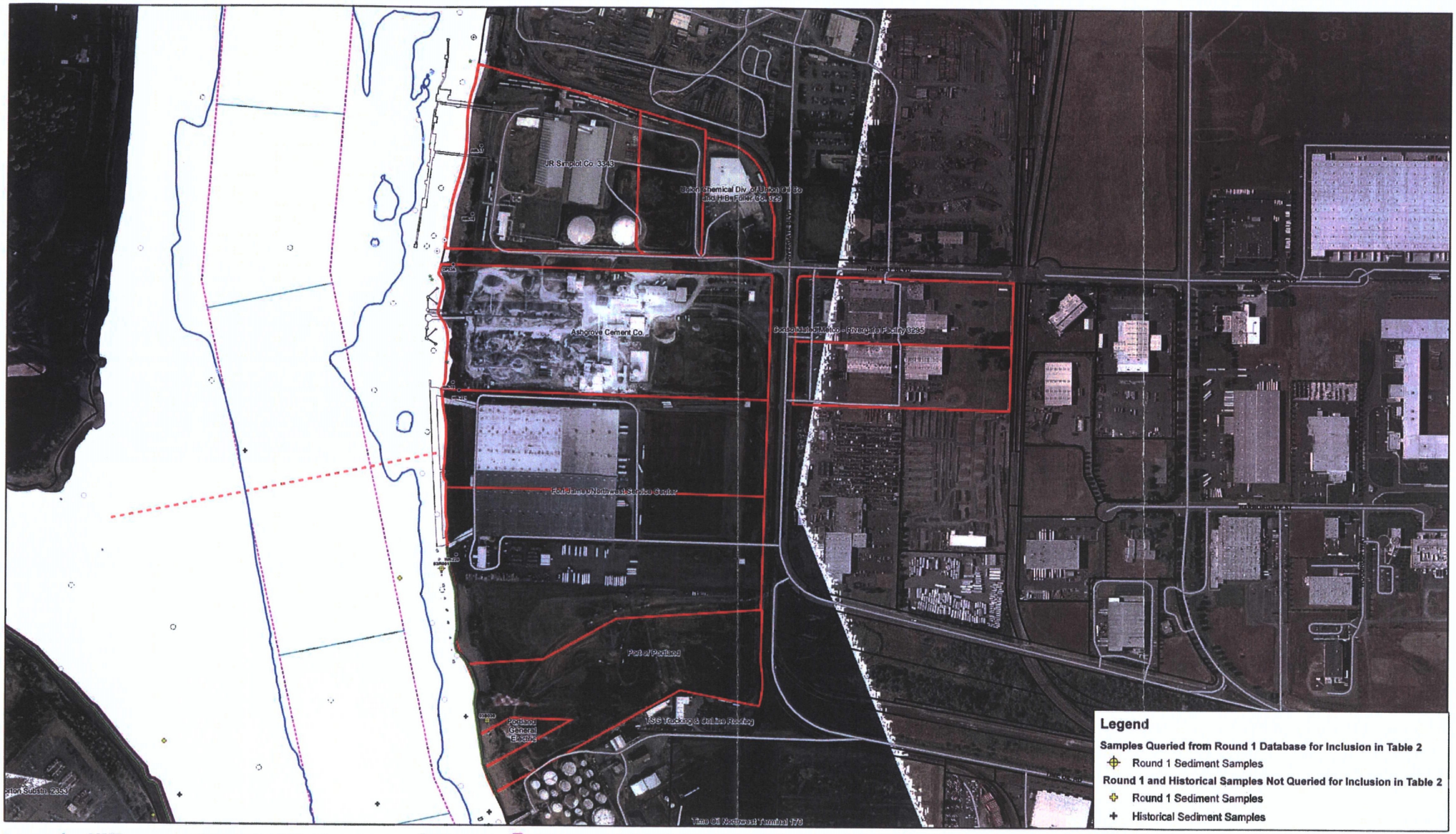
Table 1. Potential Sources and Transport Pathways Assessment
Table 2. Queried Sediment Chemistry Data

Supplemental Scanned Figures:

Figure 2. Site Plan, Rivergate Terminal (Simplot 2002)
Drawing A-410D. Post-Development Site Storm Drainage & Erosion Control Site Plan (Simplot 2002)
Top View of Project Site (proposed dredging area) (USACE 2005)

FIGURES

Figure 1. Site Features



integral consulting inc.

LWG Lower Willamette Group

Map Document: (C:\GIS\Projects\Portland_Harbor\LWG-Map-Projects\Conseptual_Site_Model\Sample_Locations.mxd)
Plot Date: 11/16/2004
Areal Photo Date: October 2001.
Base Map features from Portland Metro's RLIS.

Outfall information contained on this map is accurate according to available records; however, the City of Portland makes no warranty, xpressed or implied, as to the completeness or accuracy of the information published (updated March 2005).

- Outfalls
- Seep Photo Location (Not location of actual Seep)
- River Miles
- Navigation Channel
- -35ft. Contour (NAVD 88)
- Docks & In-water Stuctures
- Selected ECSI Site Property Boundary

Human Use Areas
- Dockside Worker
- Recreational Beach Use
- Transient

LWG Round 2 Proposed Sediment Samples
- Surface Sample Only
- Core & Surface Sample

0 200 400 800 Feet

DRAFT

DO NOT QUOTE OR CITE. This document is currently under review by US EPA and its federal, state, and tribal partners, and is subject to change in whole or in part.

Figure 1
Portland Harbor RI/FS
Conceptual Site Model
South Rivergate Industrial Park
ECSI 2980

TABLES

South Rivergate Industrial Park #2980

Table 1. Potential Sources and Transport Pathways Assessment

Potential Sources		Media Impacted					COIs																				Potential Complete Pathway				
							TPH			VOCs																						
Description of Potential Source		Surface Soil	Subsurface Soil	Groundwater	Catch Basin Solids	River Sediment	Gasoline-Range	Diesel - Range	Heavier - Range	Petroleum-Related (e.g. BTEX)	VOCs	Chlorinated VOCs	SVOCs	PAHs	Phthalates	Phenolics	Metals	PCBs	Herbicides and Pesticides	Dioxins/Furans	Butyltins	Calcium hydroxide (lime)	Ammonia	Urea	Overland Transport	Groundwater	Direct Discharge - Overwater	Direct Discharge - Storm/Wastewater	Riverbank Erosion
Upland Areas																															
J.R. Simplot	Warehouse storage and transfer of urea	?	?	?	?																			✓		?	✓	✓		
	Tank storage and transfer of anhydrous ammonia	?	?	?	?																		✓				✓			
	Tank storage and transfer of diesel oil	?	?	?	?			✓																			✓			
Ash Grove Cement	Storage tanks and manufacturing of lime products	✓	?	?	?																	✓			✓	?		✓		
Fort James	UST		?	?				?																	?	?				
Overwater Areas																															
J.R. Simplot	Transfer of urea, anhydrous ammonia, diesel					?																	✓	✓			✓			
Ash Grove Cement	Transfer of lime products					?																✓					✓			
Other Areas/Other Issues																															

Notes:

[1] All information provided in this table is referenced in the site summaries. If information is not available or inconclusive, a ? may be used, as appropriate. No new information is provided in this table.

✓ = Source, COI are present or current or historic pathway is determined to be complete or potentially complete.

? = There is not enough information to determine if source or COI is present or if pathway is complete

Blank = Source, COI and Historic and Current pathways have been investigated and shown to be not present or incomplete

UST	Underground storage Tank
AST	Above-ground Storage Tank
TPH	Total Petroleum Hydrocarbons
VOCs	Volatile Organic Compounds
SVOCs	Semi-volatile Organic Compounds
PAHs	Polycyclic aromatic hydrocarbons
BTEX	Benzene, toluene, ethylbenzene, and xylenes
PCBs	Polychorinated biphenols

Table 2. Sediment Summary Statistics

Surface or Subsurface	Analyte	Number of Samples	Number Detected	% Detected	Detected Concentrations Minimum	Maximum	Mean	Median	95th	Detected and Nondetected Concentrations Minimum	Maximum	Mean	Median	95th
surface	Aroclor 1016 (ug/kg)	2	0	0						3.9 U	3.9 U	3.9	3.9 U	3.9 U
surface	Aroclor 1242 (ug/kg)	2	0	0						3.9 U	3.9 U	3.9	3.9 U	3.9 U
surface	Aroclor 1248 (ug/kg)	2	0	0						3.9 U	3.9 U	3.9	3.9 U	3.9 U
surface	Aroclor 1254 (ug/kg)	2	0	0						3.9 U	3.9 U	3.9	3.9 U	3.9 U
surface	Aroclor 1260 (ug/kg)	2	0	0						3.9 U	3.9 U	3.9	3.9 U	3.9 U
surface	Aroclor 1221 (ug/kg)	2	0	0						7.7 U	7.9 U	7.8	7.7 U	7.7 U
surface	Aroclor 1232 (ug/kg)	2	0	0						3.9 U	3.9 U	3.9	3.9 U	3.9 U
surface	Polychlorinated biphenyls (ug/kg)	2	0	0						7.7 U	7.9 U	7.8	7.7 U	7.7 U
surface	Total solids (percent)	2	2	100	71	89.4	80.2	71	71	71	89.4	80.2	71	71
surface	Total organic carbon (percent)	3	3	100	0.13	1.6	0.863	0.86	0.86	0.13	1.6	0.863	0.86	0.86
surface	Gravel (percent)	3	3	100	0.7	1.29	1.02	1.07	1.07	0.7	1.29	1.02	1.07	1.07
surface	Sand (percent)	1	1	100	94.98	94.98	95	94.98	94.98	94.98	94.98	95	94.98	94.98
surface	Very coarse sand (percent)	2	2	100	0.67	1.53	1.1	0.67	0.67	0.67	1.53	1.1	0.67	0.67
surface	Coarse sand (percent)	2	2	100	12.1	19.4	15.8	12.1	12.1	12.1	19.4	15.8	12.1	12.1
surface	Medium sand (percent)	2	2	100	60.6	70	65.3	60.6	60.6	60.6	70	65.3	60.6	60.6
surface	Fine sand (percent)	2	2	100	6.97	8.88	7.93	6.97	6.97	6.97	8.88	7.93	6.97	6.97
surface	Very fine sand (percent)	2	2	100	0.19	3.1	1.65	0.19	0.19	0.19	3.1	1.65	0.19	0.19
surface	Fines (percent)	1	1	100	4.32	4.32	4.32	4.32	4.32	4.32	4.32	4.32	4.32	4.32
surface	Silt (percent)	1	1	100	3.17	3.17	3.17	3.17	3.17	3.17	3.17	3.17	3.17	3.17
surface	Coarse silt (percent)	2	2	100	0.67	2.95	1.81	0.67	0.67	0.67	2.95	1.81	0.67	0.67
surface	Medium silt (percent)	2	2	100	0.02	3	1.51	0.02	0.02	0.02	3	1.51	0.02	0.02
surface	Fine silt (percent)	2	2	100	0.02	2.36	1.19	0.02	0.02	0.02	2.36	1.19	0.02	0.02
surface	Very fine silt (percent)	2	2	100	0.04	2.18	1.11	0.04	0.04	0.04	2.18	1.11	0.04	0.04
surface	Clay (percent)	1	1	100	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15
surface	8-9 Phi clay (percent)	2	2	100	0.02	1.21	0.615	0.02	0.02	0.02	1.21	0.615	0.02	0.02
surface	9-10 Phi clay (percent)	2	1	50	0.82	0.82	0.82	0.82	0.82	0.01 U	0.82	0.415	0.01 U	0.01 U
surface	>10 Phi clay (percent)	2	2	100	0.04	0.87	0.455	0.04	0.04	0.04	0.87	0.455	0.04	0.04
surface	Dalapon (ug/kg)	2	0	0						15 UJ	16 U	15.5	15 UJ	15 UJ
surface	Dicamba (ug/kg)	2	0	0						3.1 U	3.1 U	3.1	3.1 U	3.1 U
surface	MCPA (ug/kg)	2	0	0						3100 U	3100 U	3100	3100 U	3100 U
surface	Dichloroprop (ug/kg)	2	0	0						6.3 U	19 UJ	12.7	6.3 U	6.3 U
surface	2,4-D (ug/kg)	2	0	0						6.2 UJ	6.3 U	6.25	6.2 UJ	6.2 UJ
surface	Silvex (ug/kg)	2	0	0						1.5 UJ	1.6 U	1.55	1.5 UJ	1.5 UJ
surface	2,4,5-T (ug/kg)	2	0	0						1.5 UJ	1.6 U	1.55	1.5 UJ	1.5 UJ
surface	2,4-DB (ug/kg)	2	0	0						31 U	31 U	31	31 U	31 U
surface	Dinoseb (ug/kg)	2	0	0						3.1 UJ	3.1 U	3.1	3.1 UJ	3.1 UJ
surface	MCPP (ug/kg)	2	0	0						3100 U	3100 U	3100	3100 U	3100 U
surface	Aluminum (mg/kg)	3	3	100	11900	18800	15800	16600	16600	11900	18800	15800	16600	16600
surface	Antimony (mg/kg)	1	1	100	6 J	6 J	6	6 J	6 J	6 J	6 J	6	6 J	6 J
surface	Arsenic (mg/kg)	3	3	100	1.9	6	4	4.1	4.1	1.9	6	4	4.1	4.1
surface	Cadmium (mg/kg)	3	3	100	0.04	0.2	0.103	0.07	0.07	0.04	0.2	0.103	0.07	0.07
surface	Chromium (mg/kg)	3	3	100	14.8 J	19	17.1	17.6	17.6	14.8 J	19	17.1	17.6	17.6

Table 2. Sediment Summary Statistics

Surface or Subsurface	Analyte	Number of Samples	Number Detected	% Detected	Detected Concentrations					Detected and Nondetected Concentrations				
					Minimum	Maximum	Mean	Median	95th	Minimum	Maximum	Mean	Median	95th
surface	Copper (mg/kg)	3	3	100	14.4	22.1	17.3	15.3	15.3	14.4	22.1	17.3	15.3	15.3
surface	Lead (mg/kg)	3	3	100	5	7	6.3	6.9	6.9	5	7	6.3	6.9	6.9
surface	Manganese (mg/kg)	1	1	100	385	385	385	385	385	385	385	385	385	385
surface	Mercury (mg/kg)	3	0	0						0.01 U	0.06 U	0.04	0.05 U	0.05 U
surface	Nickel (mg/kg)	3	3	100	16 J	19	17.8	18.4	18.4	16 J	19	17.8	18.4	18.4
surface	Selenium (mg/kg)	3	0	0						0.2 UJ	3 U	1.17	0.3 UJ	0.3 UJ
surface	Silver (mg/kg)	3	0	0						0.02 UJ	0.2 U	0.0833	0.03 UJ	0.03 UJ
surface	Thallium (mg/kg)	1	1	100	5	5	5	5	5	5	5	5	5	5
surface	Zinc (mg/kg)	3	3	100	56.2	72	64.7	66	66	56.2	72	64.7	66	66
surface	Barium (mg/kg)	1	1	100	115	115	115	115	115	115	115	115	115	115
surface	Beryllium (mg/kg)	1	1	100	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37
surface	Calcium (mg/kg)	1	1	100	5960	5960	5960	5960	5960	5960	5960	5960	5960	5960
surface	Cobalt (mg/kg)	1	1	100	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1
surface	Iron (mg/kg)	1	1	100	29900	29900	29900	29900	29900	29900	29900	29900	29900	29900
surface	Magnesium (mg/kg)	1	1	100	3830	3830	3830	3830	3830	3830	3830	3830	3830	3830
surface	Potassium (mg/kg)	1	1	100	790	790	790	790	790	790	790	790	790	790
surface	Sodium (mg/kg)	1	1	100	893	893	893	893	893	893	893	893	893	893
surface	Vanadium (mg/kg)	1	1	100	69.6	69.6	69.6	69.6	69.6	69.6	69.6	69.6	69.6	69.6
surface	2-Methylnaphthalene (ug/kg)	3	0	0						19 U	59 U	32.7	20 U	20 U
surface	Acenaphthene (ug/kg)	3	0	0						19 U	59 U	32.7	20 U	20 U
surface	Acenaphthylene (ug/kg)	3	0	0						19 U	59 U	32.7	20 U	20 U
surface	Anthracene (ug/kg)	3	0	0						19 U	59 U	32.7	20 U	20 U
surface	Fluorene (ug/kg)	3	0	0						19 U	59 U	32.7	20 U	20 U
surface	Naphthalene (ug/kg)	3	0	0						19 U	59 U	32.7	20 U	20 U
surface	Phenanthrene (ug/kg)	3	1	33.3	70	70	70	70	70	19 U	70	36.3	20 U	20 U
surface	Low Molecular Weight PAH (ug/kg)	3	1	33.3	70	70	70	70	70	19 U	70	36.3	20 UA	20 UA
surface	Dibenz(a,h)anthracene (ug/kg)	3	1	33.3	19 M	19 M	19	19 M	19 M	1.9 U	20 U	13.6	19 M	19 M
surface	Benz(a)anthracene (ug/kg)	3	2	66.7	6.2 J	270	138	6.2 J	6.2 J	6.2 J	270	98.7	20 U	20 U
surface	Benzo(a)pyrene (ug/kg)	3	2	66.7	7.9 J	88	48	7.9 J	7.9 J	7.9 J	88	38.6	20 U	20 U
surface	Benzo(b)fluoranthene (ug/kg)	3	2	66.7	10 J	160	85	10 J	10 J	10 J	160	63.3	20 U	20 U
surface	Benzo(g,h,i)perylene (ug/kg)	3	2	66.7	23 J	48	35.5	23 J	23 J	20 U	48	30.3	23 J	23 J
surface	Benzo(k)fluoranthene (ug/kg)	3	2	66.7	11 J	120	65.5	11 J	11 J	11 J	120	50.3	20 U	20 U
surface	Chrysene (ug/kg)	3	2	66.7	9.1 J	430	220	9.1 J	9.1 J	9.1 J	430	153	20 U	20 U
surface	Fluoranthene (ug/kg)	3	2	66.7	22	690	356	22	22	19 U	690	244	22	22
surface	Indeno(1,2,3-cd)pyrene (ug/kg)	3	2	66.7	16 J	46	31	16 J	16 J	16 J	46	27.3	20 U	20 U
surface	Pyrene (ug/kg)	3	2	66.7	40	600	320	40	40	19 U	600	220	40	40
surface	Benzo(b+k)fluoranthene (ug/kg)	1	0	0						20 UA	20 UA	20	20 UA	20 UA
surface	High Molecular Weight PAH (ug/kg)	3	3	100	62 A	2470 M	872	83.2 J	83.2 J	62 A	2470 M	872	83.2 J	83.2 J
surface	Polycyclic Aromatic Hydrocarbons (ug/kg)	1	1	100	62 A	62 A	62	62 A	62 A	62 A	62 A	62	62 A	62 A
surface	2,4'-DDD (ug/kg)	2	0	0						0.39 U	0.39 U	0.39	0.39 U	0.39 U
surface	2,4'-DDE (ug/kg)	2	0	0						0.39 U	1.6 U	0.995	0.39 U	0.39 U
surface	2,4'-DDT (ug/kg)	2	0	0						0.39 U	0.39 U	0.39	0.39 U	0.39 U

Table 2. Sediment Summary Statistics

Surface or Subsurface	Analyte	Number of Samples	Number Detected	% Detected	Detected Concentrations Minimum	Maximum	Mean	Median	95th	Detected and Nondetected Concentrations Minimum	Maximum	Mean	Median	95th
surface	4,4'-DDD (ug/kg)	2	1	50	0.7	0.7	0.7	0.7	0.7	0.39 U	0.7	0.545	0.39 U	0.39 U
surface	4,4'-DDE (ug/kg)	2	1	50	1.2	1.2	1.2	1.2	1.2	0.39 U	1.2	0.795	0.39 U	0.39 U
surface	4,4'-DDT (ug/kg)	2	0	0						0.39 U	0.49 U	0.44	0.39 U	0.39 U
surface	Total of 3 isomers: pp-DDT,-DDD,-DDE (ug/kg)	2	1	50	1.9	1.9	1.9	1.9	1.9	0.39 U	1.9	1.15	0.39 U	0.39 U
surface	Aldrin (ug/kg)	2	0	0						0.19 U	0.2 U	0.195	0.19 U	0.19 U
surface	alpha-Hexachlorocyclohexane (ug/kg)	2	0	0						0.19 U	0.2 U	0.195	0.19 U	0.19 U
surface	beta-Hexachlorocyclohexane (ug/kg)	2	0	0						0.19 U	0.2 U	0.195	0.19 U	0.19 U
surface	delta-Hexachlorocyclohexane (ug/kg)	2	0	0						0.19 U	0.2 U	0.195	0.19 U	0.19 U
surface	gamma-Hexachlorocyclohexane (ug/kg)	2	0	0						0.19 U	0.2 U	0.195	0.19 U	0.19 U
surface	cis-Chlordane (ug/kg)	2	0	0						0.19 U	0.22 U	0.205	0.19 U	0.19 U
surface	trans-Chlordane (ug/kg)	2	0	0						0.19 U	0.2 U	0.195	0.19 U	0.19 U
surface	Oxychlordane (ug/kg)	2	0	0						0.39 U	0.39 U	0.39	0.39 U	0.39 U
surface	cis-Nonachlor (ug/kg)	2	0	0						0.39 U	0.39 U	0.39	0.39 U	0.39 U
surface	trans-Nonachlor (ug/kg)	2	0	0						0.39 U	0.39 U	0.39	0.39 U	0.39 U
surface	Dieldrin (ug/kg)	2	0	0						0.39 U	0.39 U	0.39	0.39 U	0.39 U
surface	alpha-Endosulfan (ug/kg)	2	0	0						0.19 U	0.2 U	0.195	0.19 U	0.19 U
surface	beta-Endosulfan (ug/kg)	2	0	0						0.39 U	0.39 U	0.39	0.39 U	0.39 U
surface	Endosulfan sulfate (ug/kg)	2	0	0						0.39 U	0.39 U	0.39	0.39 U	0.39 U
surface	Endrin (ug/kg)	2	0	0						0.39 U	0.39 U	0.39	0.39 U	0.39 U
surface	Endrin aldehyde (ug/kg)	2	0	0						0.39 U	0.39 U	0.39	0.39 U	0.39 U
surface	Endrin ketone (ug/kg)	2	0	0						0.39 U	0.71 U	0.55	0.39 U	0.39 U
surface	Heptachlor (ug/kg)	2	0	0						0.19 U	0.2 U	0.195	0.19 U	0.19 U
surface	Heptachlor epoxide (ug/kg)	2	0	0						0.19 U	0.2 U	0.195	0.19 U	0.19 U
surface	Methoxychlor (ug/kg)	2	0	0						1.9 U	2 U	1.95	1.9 U	1.9 U
surface	Mirex (ug/kg)	2	0	0						0.39 U	0.39 U	0.39	0.39 U	0.39 U
surface	Toxaphene (ug/kg)	2	0	0						19 U	20 U	19.5	19 U	19 U
surface	2,3,4,6-Tetrachlorophenol (ug/kg)	2	0	0						97 U	290 U	194	97 U	97 U
surface	2,4,5-Trichlorophenol (ug/kg)	3	0	0						97 U	290 U	162	98 U	98 U
surface	2,4,6-Trichlorophenol (ug/kg)	3	0	0						97 U	290 U	162	98 U	98 U
surface	2,4-Dichlorophenol (ug/kg)	3	0	0						58 U	180 U	99	59 U	59 U
surface	2,4-Dimethylphenol (ug/kg)	3	0	0						20 U	180 U	86	58 U	58 U
surface	2,4-Dinitrophenol (ug/kg)	3	0	0						190 U	590 U	327	200 UJ	200 UJ
surface	2-Chlorophenol (ug/kg)	3	0	0						19 U	59 U	32.7	20 U	20 U
surface	2-Methylphenol (ug/kg)	3	0	0						19 U	59 U	32.7	20 U	20 U
surface	2-Nitrophenol (ug/kg)	3	0	0						97 U	290 U	162	98 U	98 U
surface	4,6-Dinitro-2-methylphenol (ug/kg)	3	0	0						190 U	590 U	327	200 UJ	200 UJ
surface	4-Chloro-3-methylphenol (ug/kg)	3	0	0						39 U	120 U	66	39 U	39 U
surface	4-Methylphenol (ug/kg)	3	0	0						19 U	59 U	32.7	20 U	20 U
surface	4-Nitrophenol (ug/kg)	3	0	0						97 UJ	290 U	162	98 U	98 U
surface	Pentachlorophenol (ug/kg)	3	0	0						9.7 U	98 UJ	45.6	29 U	29 U
surface	Phenol (ug/kg)	3	0	0						20 U	120 U	59.7	39 U	39 U
surface	2,3,4,5-Tetrachlorophenol (ug/kg)	2	0	0						97 U	290 U	194	97 U	97 U

Table 2. Sediment Summary Statistics

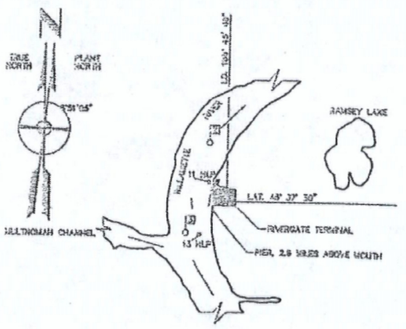
Surface or Subsurface	Analyte	Number of Samples	Number Detected	% Detected	Detected Concentrations Minimum	Maximum	Mean	Median	95th	Detected and Nondetected Concentrations Minimum	Maximum	Mean	Median	95th
surface	2,3,5,6-Tetrachlorophenol (ug/kg)	2	0	0						97 U	290 U	194	97 U	97 U
surface	Dimethyl phthalate (ug/kg)	3	0	0						19 U	59 U	32.7	20 U	20 U
surface	Diethyl phthalate (ug/kg)	3	0	0						19 U	59 U	32.7	20 U	20 U
surface	Dibutyl phthalate (ug/kg)	3	0	0						19 U	59 U	32.7	20 UJ	20 UJ
surface	Butylbenzyl phthalate (ug/kg)	3	0	0						19 U	59 U	32.7	20 U	20 U
surface	Di-n-octyl phthalate (ug/kg)	3	0	0						19 U	59 U	32.7	20 U	20 U
surface	Bis(2-ethylhexyl) phthalate (ug/kg)	3	1	33.3	61	61	61	61	61	35 UJ	94 U	63.3	61	61
surface	1,2,4-Trichlorobenzene (ug/kg)	3	0	0						19 U	59 U	32.7	20 U	20 U
surface	1,2-Dichlorobenzene (ug/kg)	3	0	0						19 U	59 U	32.7	20 U	20 U
surface	1,3-Dichlorobenzene (ug/kg)	3	0	0						19 U	59 U	32.7	20 U	20 U
surface	1,4-Dichlorobenzene (ug/kg)	3	0	0						19 U	59 U	32.7	20 U	20 U
surface	Azobenzene (ug/kg)	2	0	0						19 U	59 U	39	19 U	19 U
surface	Bis(2-chloro-1-methylethyl) ether (ug/kg)	3	0	0						19 U	59 U	32.7	20 UJ	20 UJ
surface	2,4-Dinitrotoluene (ug/kg)	3	0	0						97 U	290 U	162	98 U	98 U
surface	2,6-Dinitrotoluene (ug/kg)	3	0	0						97 U	290 U	162	98 U	98 U
surface	2-Chloronaphthalene (ug/kg)	3	0	0						19 U	59 U	32.7	20 U	20 U
surface	2-Nitroaniline (ug/kg)	3	0	0						97 U	290 U	162	98 U	98 U
surface	3,3'-Dichlorobenzidine (ug/kg)	3	0	0						97 UJ	290 U	162	98 U	98 U
surface	3-Nitroaniline (ug/kg)	3	0	0						120 UJ	350 U	197	120 U	120 U
surface	4-Bromophenyl phenyl ether (ug/kg)	3	0	0						19 U	59 U	32.7	20 U	20 U
surface	4-Chloroaniline (ug/kg)	3	0	0						58 U	180 U	99	59 U	59 U
surface	4-Chlorophenyl phenyl ether (ug/kg)	3	0	0						19 U	59 U	32.7	20 U	20 U
surface	4-Nitroaniline (ug/kg)	3	0	0						97 U	290 U	162	98 UJ	98 UJ
surface	Aniline (ug/kg)	2	0	0						19 U	59 U	39	19 U	19 U
surface	Benzoic acid (ug/kg)	3	0	0						190 U	590 U	327	200 U	200 U
surface	Benzyl alcohol (ug/kg)	3	0	0						20 UJ	290 U	136	97 U	97 U
surface	Bis(2-chloroethoxy) methane (ug/kg)	3	0	0						19 U	59 U	32.7	20 U	20 U
surface	Bis(2-chloroethyl) ether (ug/kg)	3	0	0						39 U	120 U	66	39 U	39 U
surface	Carbazole (ug/kg)	3	1	33.3	30	30	30	30	30	1.9 U	30	17.3	20 UJ	20 UJ
surface	Dibenzofuran (ug/kg)	3	0	0						1.9 U	20 U	9.27	5.9 U	5.9 U
surface	Hexachlorobenzene (ug/kg)	3	0	0						0.19 U	20 U	6.8	0.2 U	0.2 U
surface	Hexachlorobutadiene (ug/kg)	3	0	0						0.33 U	20 U	6.89	0.35 U	0.35 U
surface	Hexachlorocyclopentadiene (ug/kg)	3	0	0						97 U	290 U	162	98 UJ	98 UJ
surface	Hexachloroethane (ug/kg)	3	0	0						1.9 U	20 U	9.27	5.9 U	5.9 U
surface	Isophorone (ug/kg)	3	0	0						19 U	59 U	32.7	20 U	20 U
surface	Nitrobenzene (ug/kg)	3	0	0						19 U	59 U	32.7	20 U	20 U
surface	N-Nitrosodimethylamine (ug/kg)	2	0	0						97 U	290 UJ	194	97 U	97 U
surface	N-Nitrosodipropylamine (ug/kg)	3	0	0						39 U	120 U	66	39 U	39 U
surface	N-Nitrosodiphenylamine (ug/kg)	3	0	0						19 U	59 U	32.7	20 U	20 U

SUPPLEMENTAL FIGURES

Figure 2. Site Plan, Rivergate Terminal (Simplot 2002)
Drawing A-410D. Post-Development Site Storm Drainage & Erosion Control Site Plan (Simplot 2002)
Top View of Project Site (proposed dredging area) (USACE 2005)

FIGURE 2 SITE PLAN

ITEM	QUAN.	DESCRIPTION



KEY PLAN

GENERAL NOTES:

1. ALL COORDINATES ARE PLANT COORDINATES.
2. ALL BEARINGS ARE RELATIVE TO THE PLANT COORDINATES.

- = EXISTING PARKING
- = PROPOSED ADDITIONAL PARKING
- = SAFE WALKWAY
- = SPILL KITS
- = ABSORBENT PADS, PAD

DETAIL A

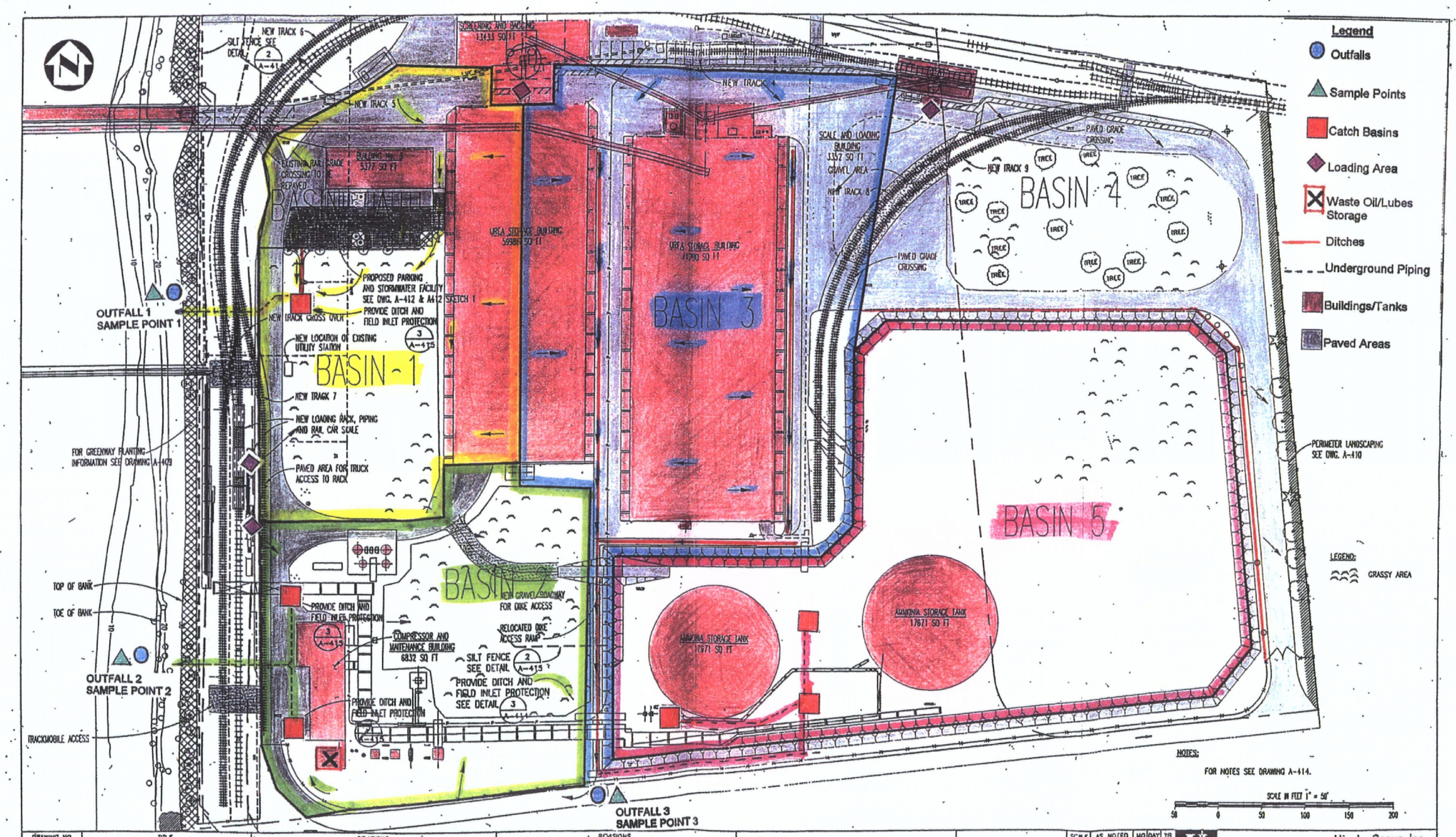
RIVERGATE TERMINAL
PORTLAND, OREGON
SCALE 1"=80'-0"

MARK	DATE	DESCRIPTION	DRN	CHK	APP'D
		REVISIONS			
A	22FEB00	REVISED SHIP NAME	DSR	DSR	
A	20000228	GENERAL REVISION	DSR	DSR	
A	04MAY94	ISSUED FOR APPROVAL	DSR	SDM	RLG

J.R. SIMPLOT CO.

RIVERGATE TERMINAL
PORTLAND, OREGON
PLOT PLAN

DRAWN	DSR	PROJECT	
CHECKED	SDM	EQUIP. NO.	
APPROVED	RLG	DRAWING NO.	REV.
DATE	04MAY94	Y-502	2
SCALE	1"=80'-0"		



DRAWING NO.	TITLE	REVISIONS REV	DATE	BY	APP'D	DESCRIPTION	REVISIONS REV	DATE	BY	APP'D	DESCRIPTION

J.R. SIMPLOT COMPANY
SIMPLOT AGRIBUSINESS
SIMPLOT

REV	DATE	BY	APP'D	DESCRIPTION
A	03/11/02	NMA		ISSUED FOR PERMIT

SCALE	AS NOTED	MO	DAY	YR
DRAWN	N. Aldridge	03	11	02
CHK'D				
APP'D				
APP'D				
APPROVED				
DATE				
PROJECT	011780.00			

Harris Group Inc.

POST-DEVELOPMENT SITE STORM DRAINAGE & EROSION CONTROL SITE PLAN

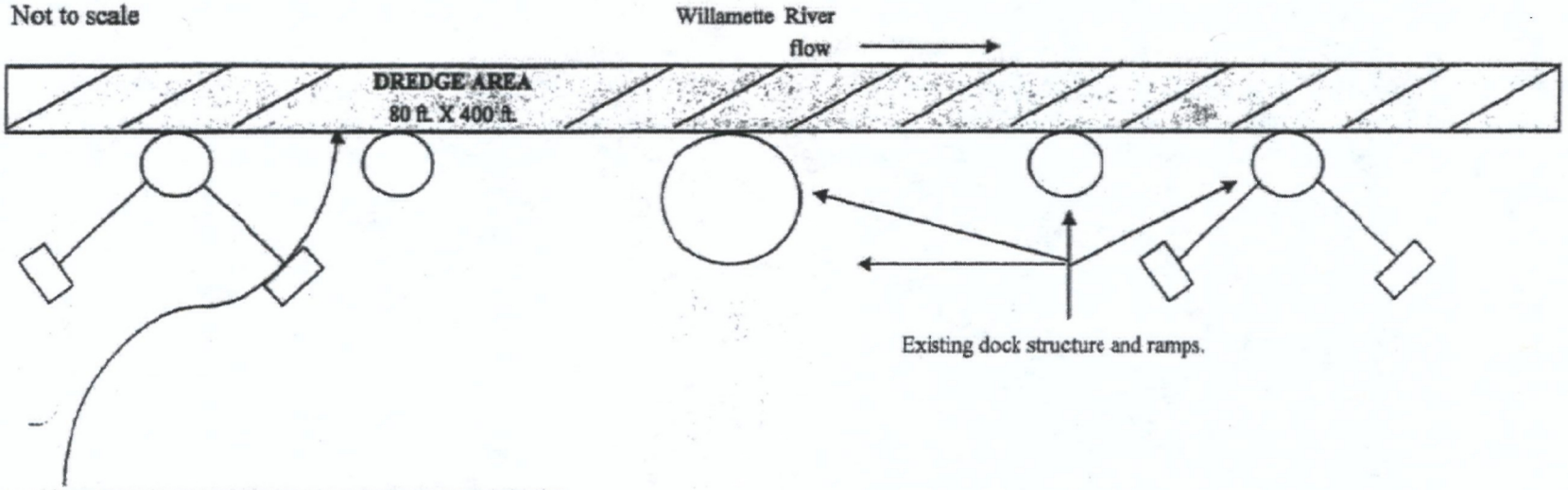
RIVERGATE LOGISTICS UPGRADE

DRAWING NUMBER A-410D REV A

NMA A-410D.DWG 10:18AM 12MAR02

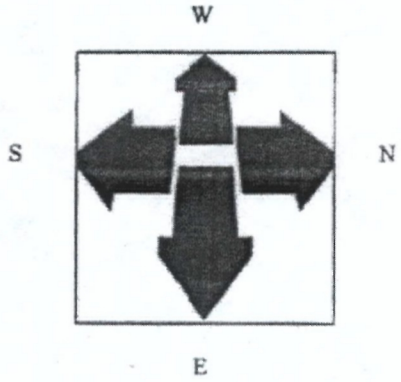
TOP VIEW OF PROJECT SITE

Not to scale



Corps No. 200500234

We are proposing to dredge approximately 2500 cubic yards of spoils annually using a mechanical clam shell dredge. Spoils will be placed on a barge and disposed of at an approved upland disposal site. Finish elevation - 30ft Columbia River Datum (CRD)



DOCK

Ordinary High Water + 14.9 ft CRD

TOP OF BANK

PROPOSED DREDGING

Willamette River	River	Mile: 2.9
County: Multnomah		
State: Oregon		
Applicant: Ash Grove Cement		Company
Date: July 1, 2005 - June 30, 2010		